

SEQUENCE LISTING

<110> Conrad, Bernard
Mach, Bernard

<120> Methods for Diagnosis and Therapy of Autoimmune
Disease, Such As Insulin Dependent Diabetes Mellitus,
Involving Retroviral Superantigens

<130> 23132-502

<140> 09/490,700

<141> 2000-01-24

<150> PCT/EP98/04926

<151> 1998-07-22

<150> 97112482.1

<151> 1997-07-22

<150> 97401773.3

<151> 1997-07-23

<160> 49

<170> PatentIn Ver. 2.1

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<213> Artificial Sequence

<220>

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25

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atccaacaac catgatggag

20

<210> 3

<211> 21

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tctcgtaagg tgcaaatgaa g

21

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ctttacaaag cagtattgct gc 22

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<220>
<223> Description of Artificial Sequence: primer

<400> 6
aacactgcga aaggccgcag g 21

<210> 7
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<400> 7
aggtattgtc caaggtttct cc 22

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<400> 8
yaaatggmgw aygytaacag act 23

<210> 9
<211> 23
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<220>
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<400> 9
yaaatggmgw aygytaactg act 23

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<210> 12
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<212> DNA
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<220>
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<400> 12
tgcgccagca atgtatccat g 21

<210> 13
<211> 21
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<220>
<223> Description of Artificial Sequence: primer

<400> 13
gggtggcagt gcatcatagg t 21

<210> 14
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
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<400> 14
gggagagggt cagcagcaga ca 22

<210> 15
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<212> DNA
<213> Artificial Sequence

<220>
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gacagcaagc cagtgataag ca 22

<210> 16
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<212> DNA
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<220>
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<400> 16
ggaacaggga ctctctgca 19

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 17
gggaagggtg aggaagtgtg 20

<210> 18
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 18
ggtgtttctc ctgaggag 19

<210> 19

<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 19
gaagaatggc caacagaagc t

21

<210> 20
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<220>
<223> Description of Artificial Sequence: primer

<400> 20
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20

<210> 21
<211> 39
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<220>
<223> Description of Artificial Sequence: primer'

<400> 21
catgtatatg cggccgctgc gccagcaatg tatccatgg

39

<210> 22
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<212> DNA
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<220>
<223> Description of Artificial Sequence: primer'

<400> 22
tatctttcgt ttctgcagca c

21

<210> 23
<211> 22
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<220>
<223> Description of Artificial Sequence: primer'

<400> 23
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22

<210> 24
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<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: primer'

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 <210> 25
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 <210> 26
 <211> 25
 <212> DNA
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 <220>
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 <400> 26
 tttttgagtc cccttagtat ttatt 25

 <210> 27
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 <220>
 <223> Description of Artificial Sequence: primer

 <400> 27
 aggtattgtc caaggtttct cc 22

 <210> 28
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 cttacaaag cagtattgct gc 22

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~~Q1~~

C1

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer

<400> 29

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21

<210> 30

<211> 29

<212> DNA

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<223> Description of Artificial Sequence: primer

<400> 30

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29

<210> 31

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 31

agactggatc cgttaagtcg ctatcgacag c

31

<210> 32

<211> 208

<212> DNA

<213> retroviral provirus

<400> 32

catctccctc aggagaaaca cccacgaatg atcaataaat actaagggga ctcagaggct 60
ggtgggatcc tccatatgct gaacgttggt tcccggggcc cccttatttc tttctctata 120
ctttgtctct gtgtcttttt cttttccaag tcttcttcat ttgcacctta cgagaaacat 180
ctccatcatg gttgttgat gggggcaa 208

<210> 33

<211> 1060

<212> DNA

<213> retroviral provirus

<400> 33

ctgcaggtgt acccaacagc tccgaagaga cagtgcacatc gagaacgggc catgatgacg 60
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gttactgtgt ctgtatagaa agaagtagac ataggagact ccattttggt ctgtactaag 180
aaaaattctt ctgccttgag atgctgttaa tctatgacct tacccecaac cccgtgctct 240
ctgaaacatg tgccgtgtca aactcagggt taaatggatt aagggtggtg caagatgtgc 300
tttgttaaac agatgcttga aggcagcatg ctcattaaga gtcacacca ctccctaata 360
tcaagtaccc agggacacaa aactgcgaa aggccgcagg gacctctgcc taggaaagcc 420
aggtattgtc caaggtttct ccccatgtga tagtctgaaa tatggcctcg tgggaaggga 480
aagacctgac catccccag accaacaccc gtaaagggtc tgtgctgagg aggattagta 540
taagaggaaa gcatgcctct tgcagttgag agaagaggaa gacatctgtc tctgccccat 600

GT
C1

cccctgggca	atggaatgtc	tcagtataaa	acccgattga	acattccatc	tactgagata	660
gggaaaaact	gccttagggc	tggaggtggg	acatgtgggc	agcaatactg	ctttgtaaag	720
cattgagatg	tttatgtgta	tgtatatcta	aaagcacagc	acttgatcct	ttaccttgtc	780
tatgatgcaa	acacctttgt	tcacgtgttt	gtctgctgac	cctctcccca	ctattgtctt	840
gtgacctga	cacatctccc	tcaggagaaa	cacccacgaa	tgatcaataa	atactaaggg	900
gactcagagg	ctgggtgggat	cctccatatg	ctgaacgttg	gttcccgggg	cccccttatt	960
tctttctcta	tactttgtct	ctgtgtcttt	ttcttttcca	agtcttcttc	atttgcacct	1020
tacgagaaac	atctccatca	tggttggttg	atgggggcaa			1060

<210> 34

<211> 1754

<212> DNA

<213> Human endogenous retrovirus

<400> 34

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ataaatatth	ccattgggta	tcattatcct	cctatttgcc	tagggagagc	accaggatgt	180
ttaatgcctg	cagtcacaaa	ttgggttgga	gaagtaccta	ctgtcagtc	taacagtaga	240
ttcactttatc	acatggtaag	cgggatgtca	ctcaggccac	gggtaaatta	tttacaagac	300
ttttctttatc	aaagatcatt	aaaattttaga	cctaaaggga	aaacttgccc	caaggaaatt	360
cctaaaggat	caaagaatac	agaagtttta	gtttgggaag	aatgtgtggc	caatagtgtg	420
gtgatattac	aaaacaatga	attcggaact	attatagatt	aggcacctcg	aggtcaattc	480
taccacaatt	gctcaggaca	aactcagtcg	tgtccaagtg	cacaagttag	tccagctgtc	540
gatagcgact	taacagaaaag	tctagacaaa	cataagcata	aaaaattaca	gtctttctac	600
ctttgggaat	gggaagaaaa	aggaatctct	accccaagac	caaaaaataat	aagtcctgtt	660
tctggtcctg	aacatccaga	attgtggagg	cttactgtgg	cctcacacca	cattagaatt	720
tggtctggaa	atcaaacctt	agaaacaaga	tatcgtaagc	cattttatac	tatcgacctg	780
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ggaaatatag	ttattaaacc	agcctcccaa	actataacct	gtgaaaattg	tagattgttt	900
acttgcatgg	attcaacttt	taattggcag	caccgtattc	tgctgggtgag	agcaagagaa	960
ggcatgtgga	tccctgtgtc	cacggaccga	ccgtgggagg	cctcgccatc	catccatatt	1020
ttgactgaaa	tattaaaagg	cgtttttaaat	agatccaaaa	gattcatttt	tacttttaatt	1080
gcagtgatta	tgggattaat	tgcagtcaca	gctacggctg	ctgtggcagg	ggttgcattg	1140
cactcttctg	ttcagtcagt	aaacttttgt	aattattggc	aaaagaattc	tacaagattg	1200
tggaaattcac	aatctagtat	tgatcaaaaa	ttggcaagtc	aaattaatga	tcttagacaa	1260
actgtcattt	ggatgggaga	caggcttgac	ttagaacatc	atctccagtt	acagtgtgac	1320
tggaaatcgt	cagatttttg	tattacaccc	caaatttata	atgagtctga	gcactactgg	1380
gacatgggta	gacgccatct	acagggaaga	gaagataatc	tcacttttaga	cattttccaaa	1440
ttaaaagaac	aaattttcga	agcatcaaaa	gcccatttaa	atttggtgcc	aggaactgag	1500
gcaattgcag	gagttgctga	tggcctcgca	aatcttaacc	ctgtcacttg	gattaagacc	1560
atcagaagta	ctatgattat	aaatctcata	ttaatcggtg	tgtgcctgtt	ttgtctgttg	1620
ttagtctgca	ggtgtacccc	aacagctccg	aaaaaaacag	tgacatcgag	aacgggccat	1680
gaatgacaaa	ggcggttttt	gttccaaaaa	aaaaaggggg	aaattttggg	gaaaaccaa	1740
aaaatgaaaa	tggt					1754

<210> 35

<211> 520


<212> DNA

<213> Human endogenous retrovirus

<400> 35

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ggtaacctgg	cccacagatg	atcgctgccc	tgccaaacct	gaggaagaag	ggatgatgat	180
aaatattttc	attgggtatc	attatcctcc	tatttgccta	gggagagcac	caggatgttt	240
aatgcctgca	gtccaaaatt	ggttggtaga	agtaccta	gtcagtccta	acagtagatt	300
cacttatcac	atggtaagcg	ggatgtcact	caggccacgg	gtaaattatt	tacaagactt	360
ttcttatcaa	agatcattaa	aatttagacc	taaagggaaa	acttgcccca	aggaaattcc	420

C1



taaaggatca aagaatacag aagtttttagt ttgggaagaa tgtgtggcca atagtgtggt 480
gatattacaa aacaatgaat tcggaactat tatagattag 520

<210> 36
<211> 153
<212> PRT
<213> Human endogenous retrovirus

<400> 36
Met Val Thr Pro Val Thr Trp Met Asp Asn Pro Ile Glu Val Tyr Val
1 5 10 15
Asn Asp Ser Val Trp Val Pro Gly Pro Thr Asp Asp Arg Cys Pro Ala
20 25 30
Lys Pro Glu Glu Glu Gly Met Met Ile Asn Ile Ser Ile Gly Tyr His
35 40 45
Tyr Pro Pro Ile Cys Leu Gly Arg Ala Pro Gly Cys Leu Met Pro Ala
50 55 60
Val Gln Asn Trp Leu Val Glu Val Pro Thr Val Ser Pro Asn Ser Arg
65 70 75 80
Phe Thr Tyr His Met Val Ser Gly Met Ser Leu Arg Pro Arg Val Asn
85 90 95
Tyr Leu Gln Asp Phe Ser Tyr Gln Arg Ser Leu Lys Phe Arg Pro Lys
100 105 110
Gly Lys Thr Cys Pro Lys Glu Ile Pro Lys Gly Ser Lys Asn Thr Glu
115 120 125
Val Leu Val Trp Glu Glu Cys Val Ala Asn Ser Val Val Ile Leu Gln
130 135 140
Asn Asn Glu Phe Gly Thr Ile Ile Asp
145 150

<210> 37
<211> 603
<212> DNA
<213> Human endogenous retrovirus

<400> 37
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ggtacctggc cccacagatg atcgctgccc tgccaaacct gaggaagaag ggatgatgat 180
aaatatttcc attgggtatc attatcctcc tatttgcta gggagagcac caggatgttt 240
aatgcctgca gtccaaaatt ggttggtaga agtacctact gtcagtccta acagtagatt 300
cacttatcac atggtaagcg ggatgtcact caggccacgg gtaaattatt tacaagactt 360
ttcttatcaa agatcattaa aatttagacc taaagggaag acttgcccca aggaaattcc 420
taaaggatca aagaatacag aagtttttagt ttgggaagaa tgtgtggcca atagtgtggt 480
gatattacaa aacaatgaat tcggaactat tatagattag gcacctcgag gtcaattcta 540
ccacaattgc tcaggacaaa ctcagtcgtg tccaagtgca caagtgagtc cagctgtcga 600
tag 603

<210> 38

<211> 561
<212> PRT
<213> Human endogenous retrovirus

<220>
<221> VARIANT
<222> (154)
<223> Wherein Xaa at position 154 is "Z" as described in
the figure legend for FIG. 7F.

<400> 38

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Asn Asp Ser Val Trp Val Pro Gly Pro Thr Asp Asp Arg Cys Pro Ala
20 25 30
Lys Pro Glu Glu Glu Gly Met Met Ile Asn Ile Ser Ile Gly Tyr His
35 40 45
Tyr Pro Pro Ile Cys Leu Gly Arg Ala Pro Gly Cys Leu Met Pro Ala
50 55 60
Val Gln Asn Trp Leu Val Glu Val Pro Thr Val Ser Pro Asn Ser Arg
65 70 75 80
Phe Thr Tyr His Met Val Ser Gly Met Ser Leu Arg Pro Arg Val Asn
85 90 95
Tyr Leu Gln Asp Phe Ser Tyr Gln Arg Ser Leu Lys Phe Arg Pro Lys
100 105 110
Gly Lys Thr Cys Pro Lys Glu Ile Pro Lys Gly Ser Lys Asn Thr Glu
115 120 125
Val Leu Val Trp Glu Glu Cys Val Ala Asn Ser Val Val Ile Leu Gln
130 135 140
Asn Asn Glu Phe Gly Thr Ile Ile Asp Xaa Ala Pro Arg Gly Gln Phe
145 150 155 160
Tyr His Asn Cys Ser Gly Gln Thr Gln Ser Cys Pro Ser Ala Gln Val
165 170 175
Ser Pro Ala Val Asp Ser Asp Leu Thr Glu Ser Leu Asp Lys His Lys
180 185 190
His Lys Lys Leu Gln Ser Phe Tyr Leu Trp Glu Trp Glu Glu Lys Gly
195 200 205
Ile Ser Thr Pro Arg Pro Lys Ile Ile Ser Pro Val Ser Gly Pro Glu
210 215 220
His Pro Glu Leu Trp Arg Leu Thr Val Ala Ser His His Ile Arg Ile
225 230 235 240
Trp Ser Gly Asn Gln Thr Leu Glu Thr Arg Tyr Arg Lys Pro Phe Tyr
245 250 255
Thr Ile Asp Leu Asn Ser Ile Leu Thr Val Pro Leu Gln Ser Cys Leu
260 265 270

Lys Pro Pro Tyr Met Leu Val Val Gly Asn Ile Val Ile Lys Pro Ala
 275 280 285
 Ser Gln Thr Ile Thr Cys Glu Asn Cys Arg Leu Phe Thr Cys Ile Asp
 290 295 300
 Ser Thr Phe Asn Trp Gln His Arg Ile Leu Leu Val Arg Ala Arg Glu
 305 310 315 320
 Gly Met Trp Ile Pro Val Ser Thr Asp Arg Pro Trp Glu Ala Ser Pro
 325 330 335
 Ser Ile His Ile Leu Thr Glu Ile Leu Lys Gly Val Leu Asn Arg Ser
 340 345 350
 Lys Arg Phe Ile Phe Thr Leu Ile Ala Val Ile Met Gly Leu Ile Ala
 355 360 365
 Val Thr Ala Thr Ala Ala Val Ala Gly Val Ala Leu His Ser Ser Val
 370 375 380
 Gln Ser Val Asn Phe Val Asn Tyr Trp Gln Lys Asn Ser Thr Arg Leu
 385 390 395 400
 Trp Asn Ser Gln Ser Ser Ile Asp Gln Lys Leu Ala Ser Gln Ile Asn
 405 410 415
 Asp Leu Arg Gln Thr Val Ile Trp Met Gly Asp Arg Leu Asp Leu Glu
 420 425 430
 His His Phe Gln Leu Gln Cys Asp Trp Asn Thr Ser Asp Phe Cys Ile
 435 440 445
 Thr Pro Gln Ile Tyr Asn Glu Ser Glu His His Trp Asp Met Val Arg
 450 455 460
 Arg His Leu Gln Gly Arg Glu Asp Asn Leu Thr Leu Asp Ile Ser Lys
 465 470 475 480
 Leu Lys Glu Gln Ile Phe Glu Ala Ser Lys Ala His Leu Asn Leu Val
 485 490 495
 Pro Gly Thr Glu Ala Ile Ala Gly Val Ala Asp Gly Leu Ala Asn Leu
 500 505 510
 Asn Pro Val Thr Trp Ile Lys Thr Ile Arg Ser Thr Met Ile Ile Asn
 515 520 525
 Leu Ile Leu Ile Val Val Cys Leu Phe Cys Leu Leu Leu Val Cys Arg
 530 535 540
 Cys Thr Pro Thr Ala Pro Lys Lys Thr Val Thr Ser Arg Thr Gly His
 545 550 555 560
 Glu

<210> 39
 <211> 604

<212> DNA

<213> Human endogenous retrovirus

<400> 39

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ggtacctggc cccacagatg atcgctgccc tgccaaacct gaggaagaag ggatgatgat 180
aaatattttcc attgggtatc attatcctcc tatttgccta gggagagcac caggatgttt 240
aatgcctgca gtccaaaatt ggttggtaga agtacctact gtcagtccta acagtagatt 300
cacttatcac atggtaagcg ggatgtcact caggccacgg gtaaattatt tacaagactt 360
ttcttatcaa agatcattaa aatttagacc taaagggaaa acttgcccca aggaaattcc 420
taaaggatca aagaatacag aagttttagt ttgggaagaa tgtgtggcca atagtgtggt 480
gatattacaa aacaatgaat tcggaactat tatagattta ggcacctcga ggtcaattct 540
accacaattg ctcaggacaa actcagtcgt gtccaagtgc acaagtgagt ccagctgtcg 600
atag 604
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<210> 40

<211> 181

<212> PRT

<213> Human endogenous retrovirus

<400> 40

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Asn Asp Ser Val Trp Val Pro Gly Pro Thr Asp Asp Arg Cys Pro Ala
      20              25              30

Lys Pro Glu Glu Glu Gly Met Met Ile Asn Ile Ser Ile Gly Tyr His
      35              40              45

Tyr Pro Pro Ile Cys Leu Gly Arg Ala Pro Gly Cys Leu Met Pro Ala
      50              55              60

Val Gln Asn Trp Leu Val Glu Val Pro Thr Val Ser Pro Asn Ser Arg
      65              70              75              80

Phe Thr Tyr His Met Val Ser Gly Met Ser Leu Arg Pro Arg Val Asn
      85              90              95

Tyr Leu Gln Asp Phe Ser Tyr Gln Arg Ser Leu Lys Phe Arg Pro Lys
      100             105             110

Gly Lys Thr Cys Pro Lys Glu Ile Pro Lys Gly Ser Lys Asn Thr Glu
      115             120             125

Val Leu Val Trp Glu Glu Cys Val Ala Asn Ser Val Val Ile Leu Gln
      130             135             140

Asn Asn Glu Phe Gly Thr Ile Ile Asp Leu Gly Thr Ser Arg Ser Ile
      145             150             155             160

Leu Pro Gln Leu Leu Arg Thr Asn Ser Val Val Ser Lys Cys Thr Ser
      165             170             175

Glu Ser Ser Cys Arg
      180
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<210> 41

<211> 182
<212> PRT
<213> Human endogenous retrovirus

<400> 41
Phe Thr Ile Pro Leu Ala Glu Gln Asp Cys Glu Lys Phe Ala Phe Thr
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Ile Pro Ala Ile Asn Asn Lys Glu Pro Ala Thr Arg Phe Gln Trp Lys
20 25 30
Val Leu Pro Gln Gly Met Leu Asn Ser Pro Thr Ile Cys Gln Thr Phe
35 40 45
Val Gly Arg Ala Leu Gln Pro Val Arg Asp Lys Phe Ser Asp Cys Tyr
50 55 60
Ile Ile His Tyr Phe Asp Asp Ile Leu Cys Ala Ala Glu Thr Lys Asp
65 70 75 80
Lys Leu Ile Asp Cys Tyr Thr Phe Leu Pro Ala Glu Val Ala Asn Ala
85 90 95
Gly Leu Ala Ile Ala Ser Asp Lys Ile Gln Thr Ser Thr Pro Phe His
100 105 110
Tyr Leu Gly Met Gln Ile Glu Asn Arg Lys Ile Lys Pro Gln Lys Ile
115 120 125
Glu Ile Arg Lys Asp Thr Leu Lys Thr Leu Asn Asp Phe Gln Lys Leu
130 135 140
Leu Gly Asp Ile Asn Trp Ile Arg Pro Thr Leu Gly Ile Pro Thr Tyr
145 150 155 160
Ala Met Ser Asn Leu Phe Ser Ile Leu Arg Gly Asp Ser Asp Leu Asn
165 170 175
Ser Lys Arg Met Leu Thr
180

<210> 42
<211> 250
<212> DNA
<213> Human endogenous retrovirus

<400> 42
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ttacatctaa gtgattgtac ccaataaata gtgtggagac cagagctctg agccttttgc 120
agcctccatt ttgcaactgg tcccctggct cccaccttta tgaactctta acctgtcttt 180
tctcattcct ttgtcaccat tggacttttg gtaccctacg ggtggtgttg aggctgtcac 240
cgcacattaa 250

<210> 43
<211> 203
<212> DNA
<213> Human endogenous retrovirus

<400> 43

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 ctccacacct ctatatcttct gtgtgtgtgt ctttaattcc tccagtgttg ctggggttagg 180
 gtctcctcga cgagctgtcg tgc 203

<210> 44
 <211> 283
 <212> DNA
 <213> Human endogenous retrovirus

<400> 44
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 cagagaactc tggccttgca gagagtcctt gttcccactt cactttcctt ttacacaaat 180
 aaaaccctgc tttcactcat gcatcaaatt gtctgtgagc ctacattttt gtggccatgg 240
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<210> 45
 <211> 245
 <212> DNA
 <213> Human endogenous retrovirus

<400> 45
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 <213> Human endogenous retrovirus

<400> 46
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 <212> DNA
 <213> Human endogenous retrovirus

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<210> 48
 <211> 264
 <212> DNA
 <213> Human endogenous retrovirus

C
b

<400> 48
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<220>
<223> Description of Artificial Sequence: primer

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BT
cancel